Air Force SBIR Impact

Simplified Manual Flight Control System for UAVs

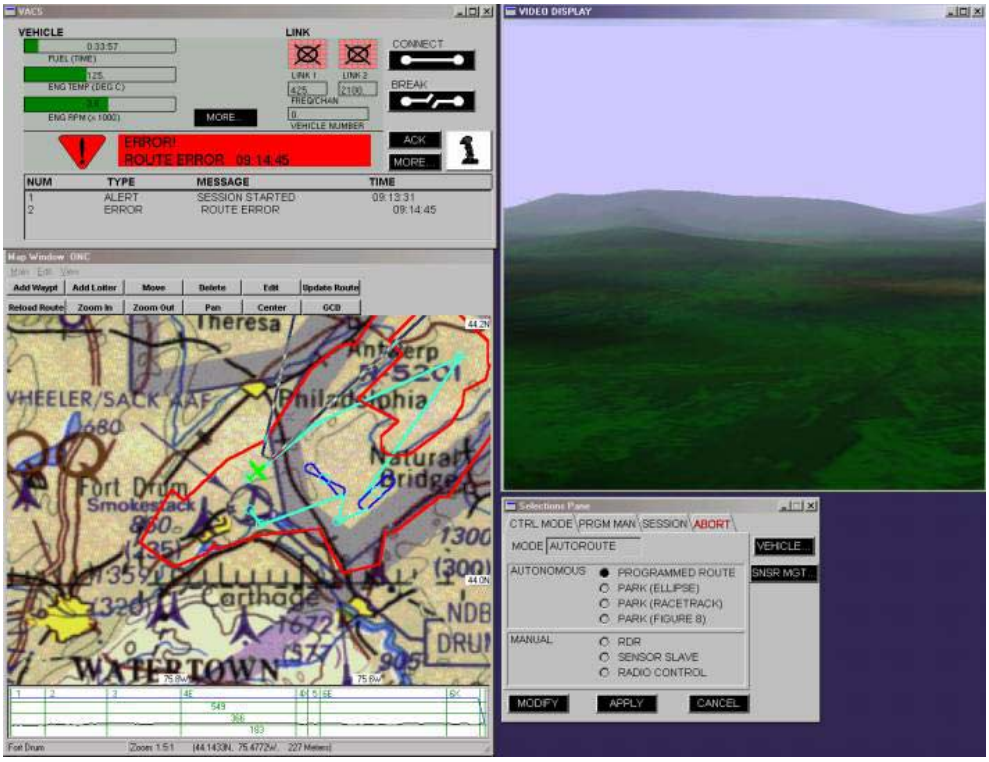
Company:
Geneva Aerospace, Inc.

Location:
Dallas, TX

Employees:
6

President:
Dave Felio

Project Officer:
Andrew Probert
AFRL Air Vehicles Directorate
Wright-Patterson AFB, OH



Air Force Requirements:

The Air Force Research Laboratory was searching for new Unmanned Aerial Vehicle (UAV) control systems technology that greatly simplified the manual control of UAVs and eliminated the requirement for highly trained, rated Air Force pilots to operate the UAV systems. The Air Force was also looking for a solution that significantly reduced the UAV operator workload and training requirements, thus significantly reducing the training and logistics costs associated with the operation of UAVs.

Innovative Technology:

Geneva Aerospace is currently in Phase II of an Air Force Small Business Innovation Research Program (SBIR). In this project, Geneva is developing a system that greatly simplifies the control of Unmanned Aerial Vehicles (UAVs) for remote operators. With this new UAV control technology, unskilled operators with no piloting or aviation experience can fully control an unmanned aerial vehicle. As the dependence on UAVs for military operations grows and UAV technology is integrated into the emerging global military command and control

For more information on this story, contact Air Force TechConnect at 1-800-203-6451 or at www.afrl.af.mil/techconn/index.htm

architecture, the cost and complexity of managing and controlling these systems must be bounded. The Air Force has recognized this need and has begun addressing the problem by funding new UAV technology development programs, such as Geneva's SBIR project, that focus on the human factors associated with managing and controlling UAVs. With the Air Force's needs defined, Geneva developed the underlying control technology that will facilitate the emergence of new UAV systems that are easier to fly than automobiles are to drive. This control simplicity enables a larger community of military operators, beyond the small group of highly trained aviators, to control UAVs, while at the same time allowing a single operator to manage multiple UAVs at one time.

Company Benefit:

Geneva has begun commercializing its product, integrating its new UAV Control technology into several Air Force, Army, and Navy research and development programs and has visions for wide-spread commercial applications. A few of these projects include:

Geneva has been funded to integrate its variable autonomy control system (VACS) software into SDS International's LitFlite simulation to perform Uninhabited Combat Air Vehicle (UCAV) Human-Systems Interface (HIS) research under a program funded by the AFRL Human Effectiveness Directorate.

Geneva has been awarded a contract to integrate this system into the Army Aviation and Missile Command's (AAMCOM) Avistar small UAV system. Geneva has been awarded a contract to integrate this control system into a Navy low-cost cruise missile system. Geneva has begun discussions with various industry partners for the adaptation of its system into a new commercial UAV system to support a low-cost approach to performing power-line and pipeline inspections for the power, oil, and gas industries. Geneva has begun establishing European partnerships to offer a version of its system in both the U.S. and European markets.

Geneva Aerospace and their government customers believe that this technology can be the catalyst that drives the use of UAVs for commercial applications such as border patrol, farming applications, search and rescue, pipeline and power-line inspection, motion picture filming, and many more.

Company Quote:

"The SBIR program provided the financial foundation to launch Geneva Aerospace. Prior to our first SBIR award, our company was purely conceptual. We are now a fast growing company, with both military (SBIR and non-SBIR) and commercial customers, offering both products and services in our field of expertise."

David Duggan
Vice President
Geneva Aerospace, Inc.